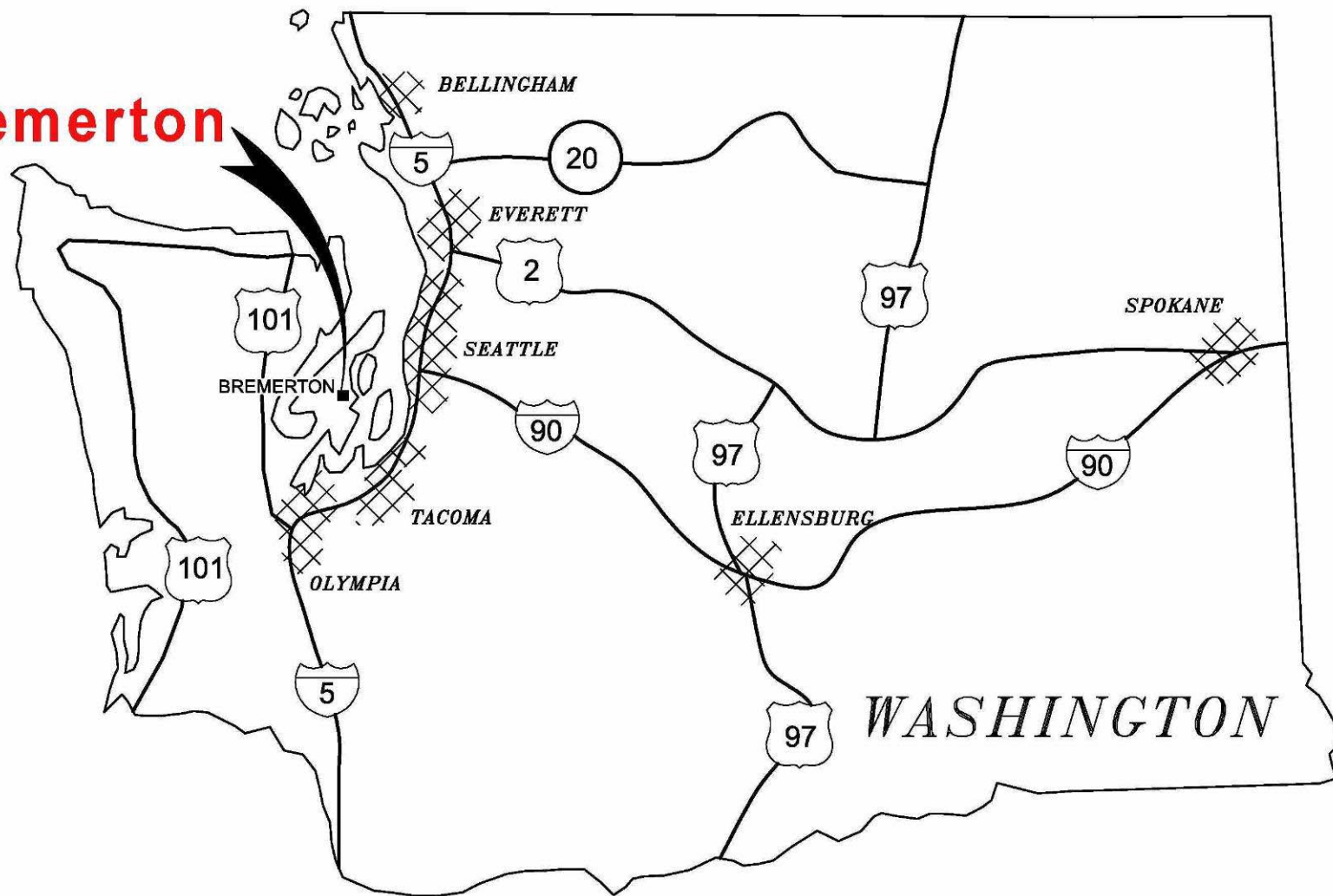


City of Bremerton CSO Reduction Program

ENVVEST Community Advisory Committee
Bremerton Washington

Mike Mecham
City of Bremerton
June 15, 2006

Bremerton



Bremerton - Key Features

- Population – 37,000
- City Began in 1891 with U. S. Navy Purchase of Puget Sound Naval Shipyard
- Former Home of U.S.S. Missouri

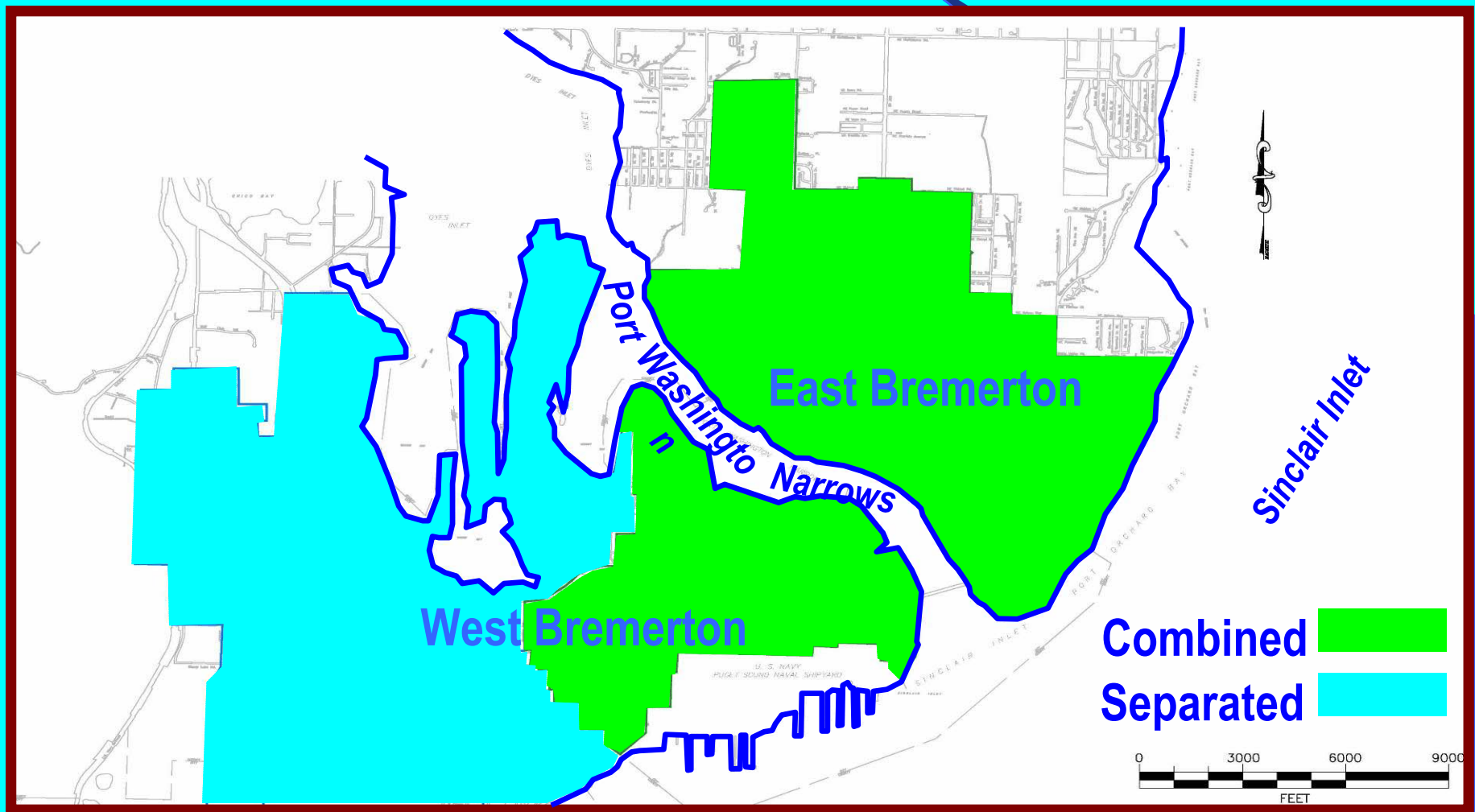


**Sewer
Developed
as a
Combined
System**

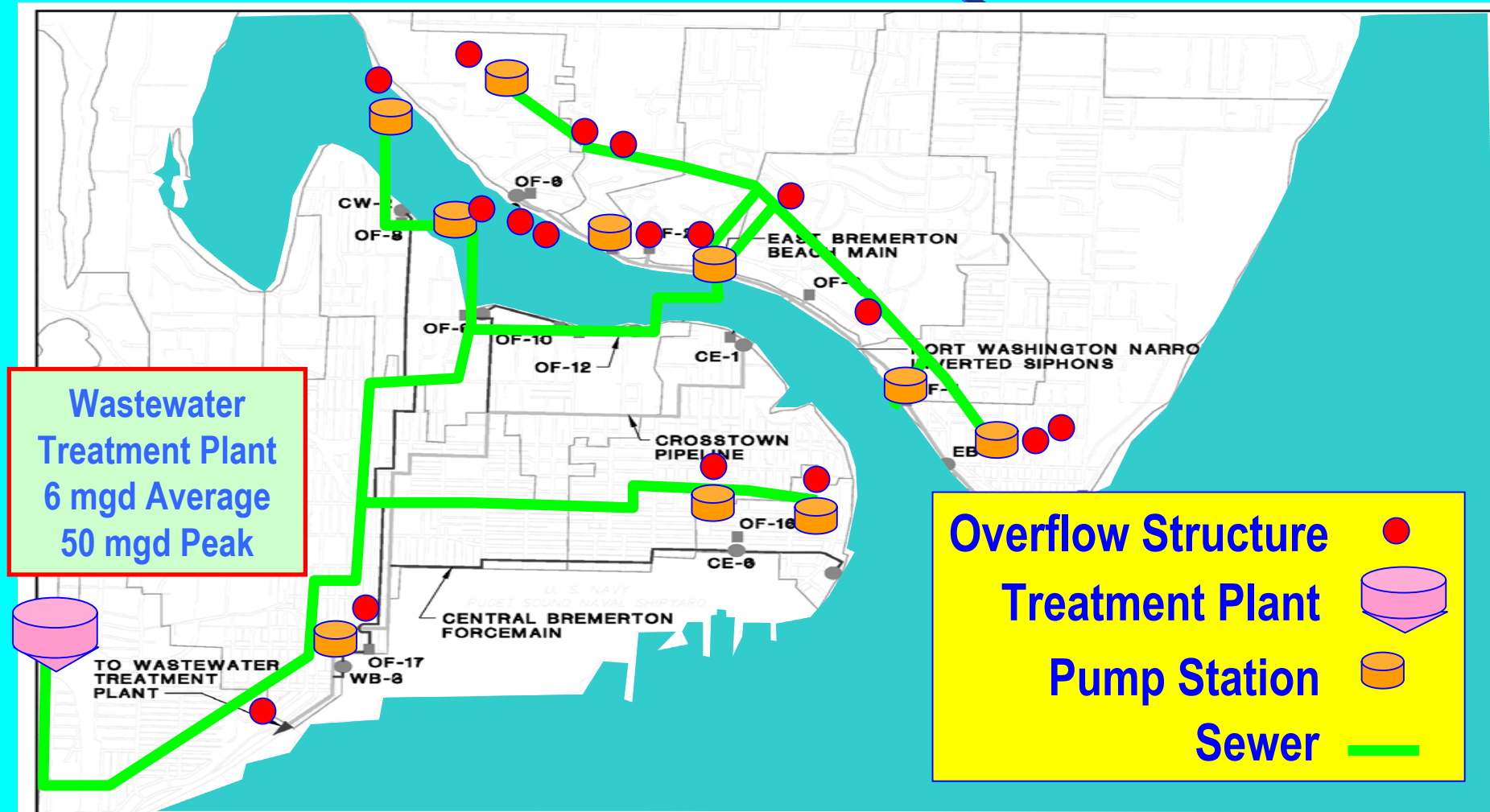
Bremerton Service Area

● 23 square miles

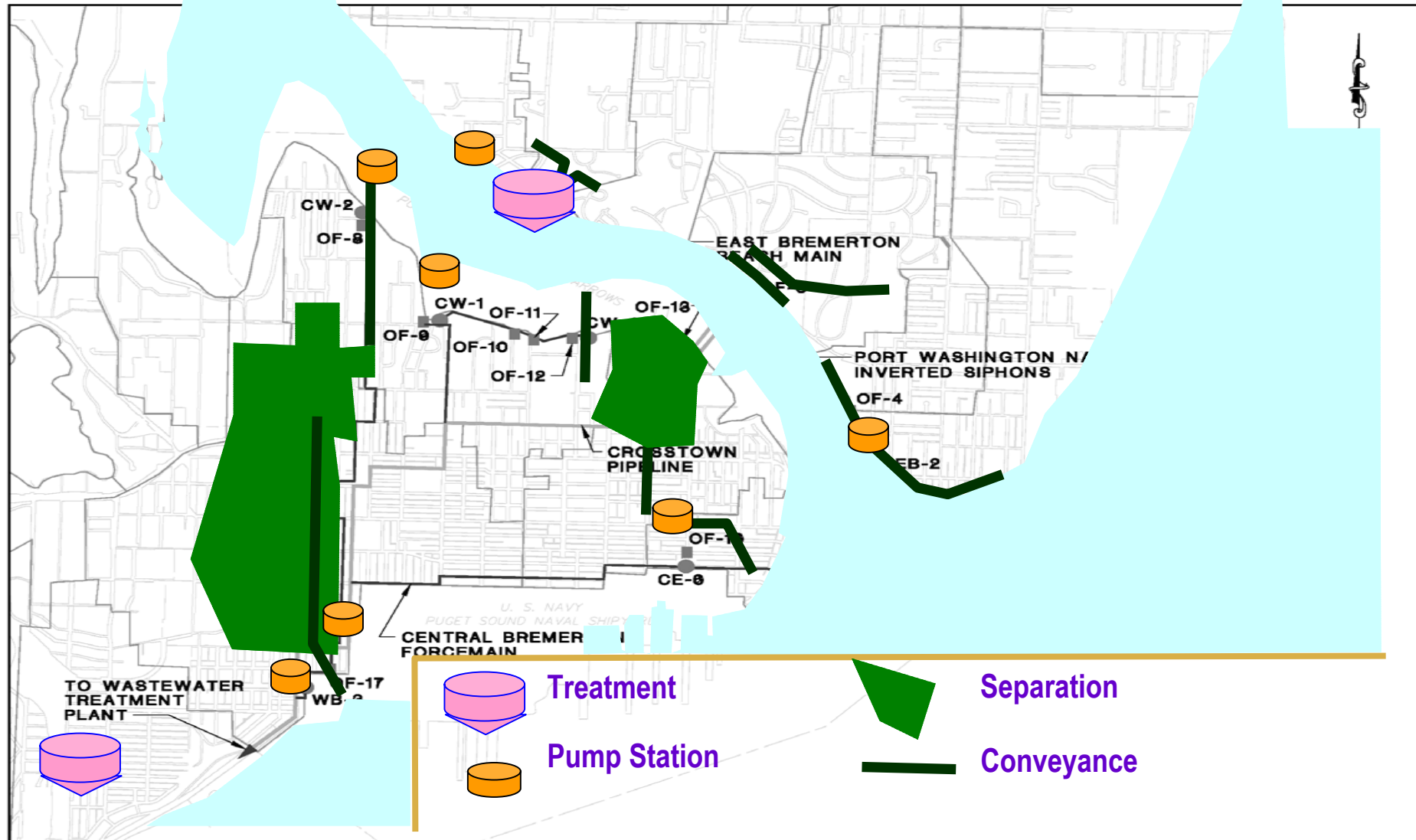
1 Mile



Sewer Collection System



System Wide Approach is Required



CSO Reduction Improvements

- EB-2 Pump Station - Before



CSO Reduction Improvements

- EB-2 Pump Station - After



2004.10.18 14:17

Remote, Intermittent Operating CSO Treatment Plant



Other Reduction Activities – Icing on the Cake

- Additional Separation and Downspout Disconnection Program Removed 25 acres of Impervious Inflow Area

Measured Overflows

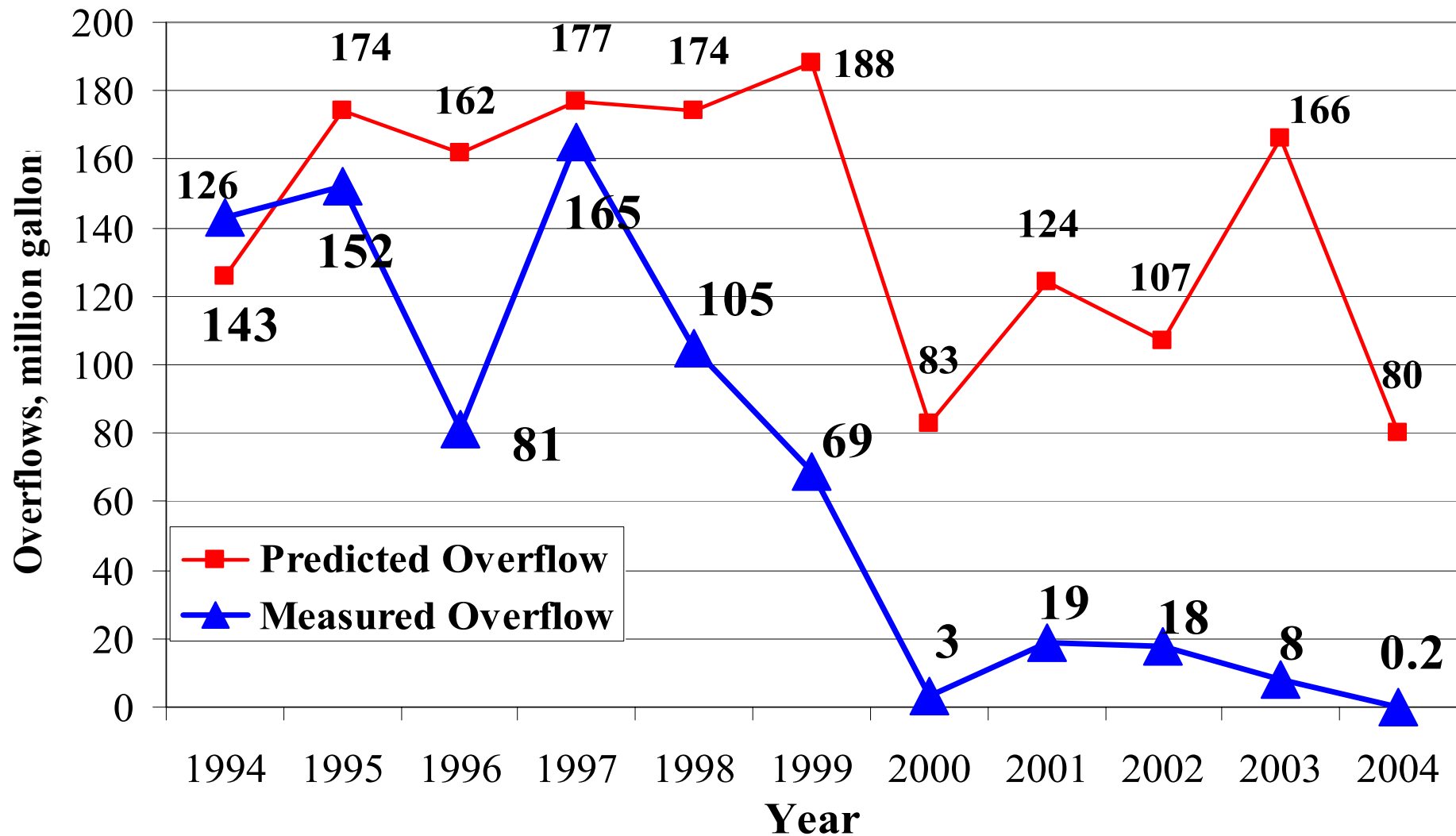


WHAT WERE THE RESULTS

DID IT WORK ?

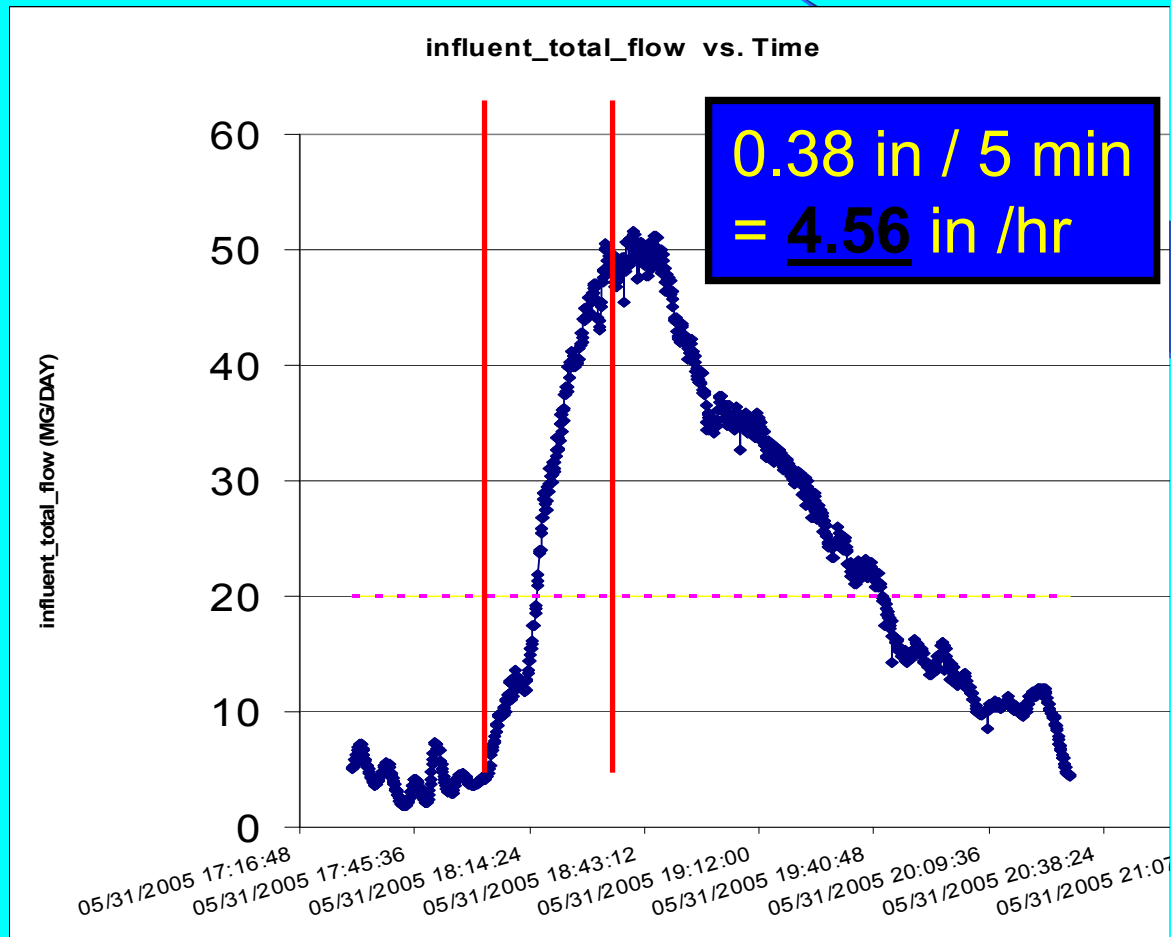
Measured Overflows

● 17 Overflow Structures



WWTP Plant Influent

May 31, 2005

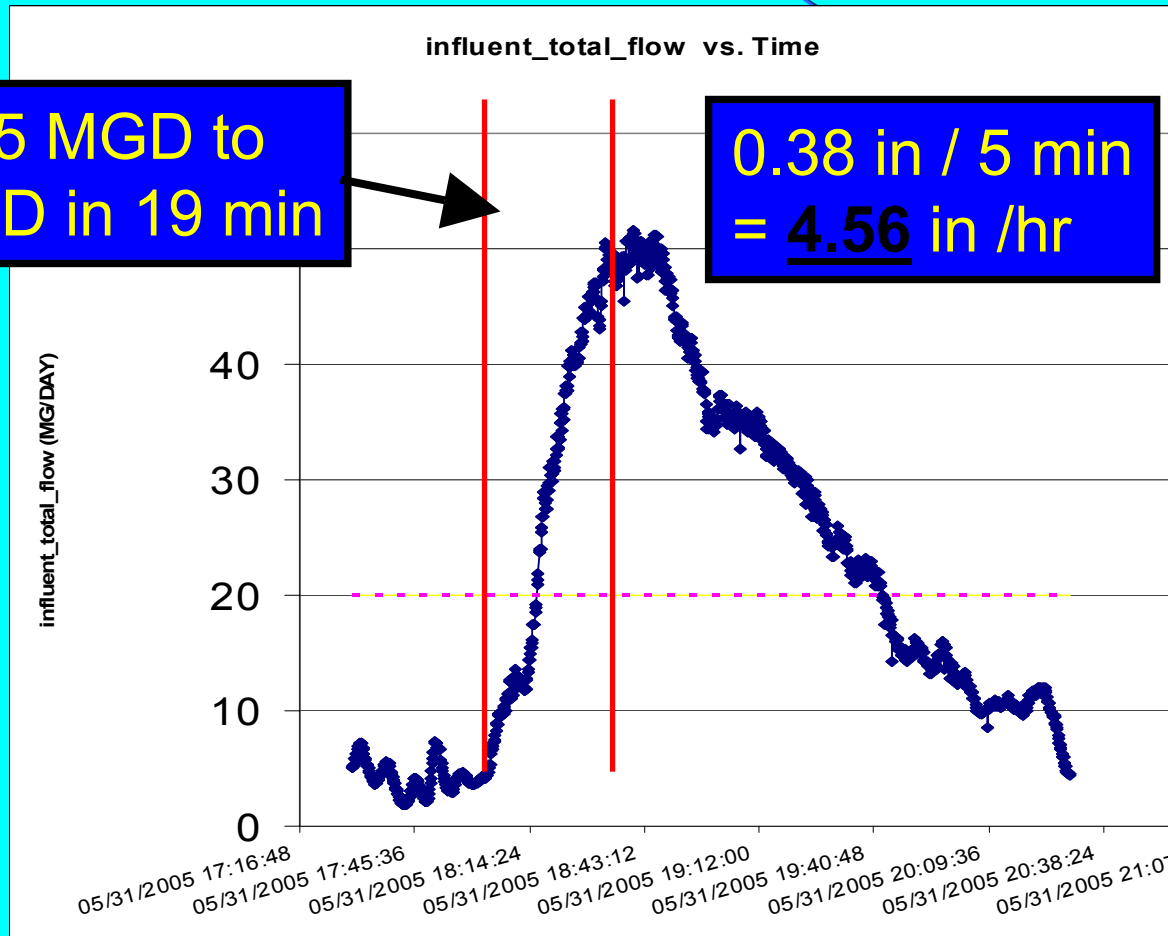


WWTP Plant Influent

May 31, 2005

From 4.5 MGD to
52+ MGD in 19 min

0.38 in / 5 min
= 4.56 in / hr

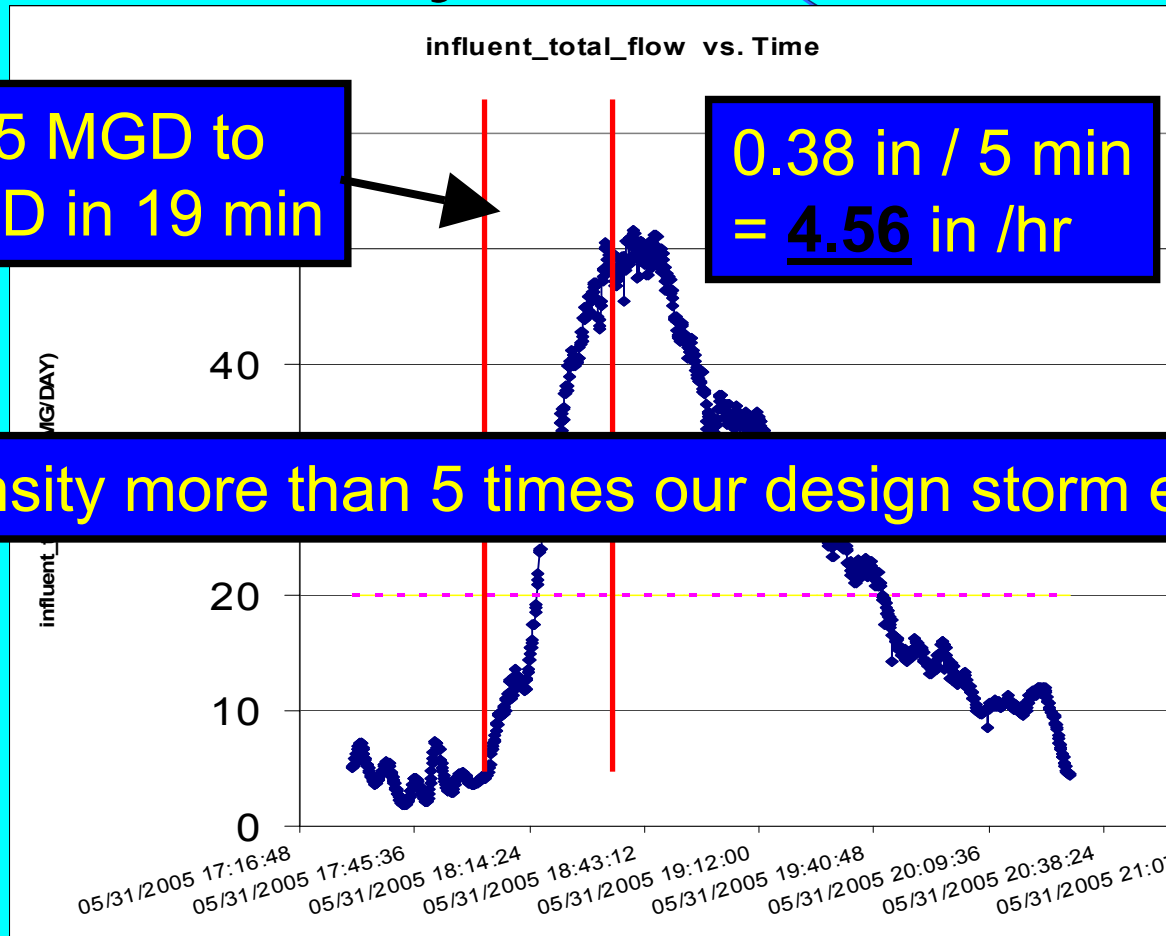


WWTP Plant Influent May 31, 2005

From 4.5 MGD to
52+ MGD in 19 min

0.38 in / 5 min
= 4.56 in /hr

Intensity more than 5 times our design storm event



CSO OVERFLOWS

May 31, 2005

- OF-11 23,000 GALLONS
- OF-13 32,000 GALLONS
- OF-16 85,000 GALLONS
- OF-17 134,000 GALLONS
274,000 GALLONS

Actual 2004 CSO Overflow = 234,000 Gallons

Estimated 2004 CSO Discharge without CSO Program

79,800,000 Gallons

- OF-11 23,000 GALLONS
- OF-13 32,000 GALLONS
- OF-16 85,000 GALLONS
- OF-17 134,000 GALLONS

274,000 GALLONS

Benefits

- The CSO reduction program has had a dramatic affect on reducing CSOs from the City of Bremerton.
- In 2003, the Washington State Department of Health opened shell fish beds in Dyes Inlet at the end of Port Washington Narrows, citing CSO reduction as a factor.

What Did It Cost ??

How Did The Bremerton Wastewater
Utility Finance This Effort ?

Basin		
Planning	\$715,000	
Litigation & WQ Monitoring	\$1,005,000	
Private Prop Const/Misc Const	\$1,020,000	
Anderson Cove	\$2,930,000	
Callow Avenue	\$17,193,000	
Cherry Avenue and Trenton Avenue	\$5,200,000	
East Park	\$535,000	
Pacific Avenue	\$8,150,000	
Pine Road	\$5,700,000	
Stevens Canyon	\$720,000	
Tracyton Beach	\$582,000	
Warren Avenue	\$4,700,000	
WWTP Upgrades	\$3,200,000	
TOTAL	\$51,650,000	

Program Cost

Planning	\$715,000
Basin Design and Construction	\$40,010,000
CSO Treatment Plant Design and Construction	\$5,700,000
Wastewater Treatment Plant Upgrades	\$3,200,000
Litigation	\$1,005,000
Private Property and Miscellaneous	\$1,020,000
TOTAL	\$51,650,000

Financial Impacts To The Wastewater Utility

- Most of the cost will be payed by the rate payers
- The Wastewater Utility incurred \$40,000,000 in debt (annual debt service of approximately \$2.3 million)
- Rates have increased in 2005 15% and in 2006 14%
- One of the lowest per capita income in the Puget Sound area

Summary

- Successful program to increase Water quality in Dyes and Sinclair Inlet
- Opened Shellfish beds
- Significant capital program
- The wastewater utility has incurred a large debt
- Significant cost to the Bremerton rate payer.